

WHAT IS CLAIMED IS:

1. A method for cleaning a liquid ejector including a liquid ejection head for ejecting liquid
5 from a nozzle, the method including:
sealing the liquid ejection head with a cap means;
and

generating negative pressure with a gear pump connected to the cap means, and discharging fluid from
10 the liquid ejection head with the negative pressure, the method being characterized by:

suctioning fluid from the cap means with the gear pump so that a suction amount of the fluid per unit time becomes equal to a first suction amount in order to
15 discharge fluid from the nozzle; and

afterwards, changing the suction amount of the fluid from the cap means per unit time from the first suction amount to a smaller second suction amount.

20 2. A liquid ejector comprising:

a liquid ejection head including a nozzle for ejecting a liquid;

a cap means for sealing the liquid ejection head;

a gear pump, connected to the cap means, for
25 generating negative pressure and discharging fluid out of the liquid ejection head with the negative pressure in a state in which the cap means seals the liquid ejection head, the liquid ejector being characterized in that the liquid ejector:

30 suctioning fluid from the cap means with the gear pump so that a suction amount of the fluid per unit time becomes equal to a first suction amount in order to discharge fluid from the nozzle; and

afterwards, changes the suction amount of the fluid
35 from the cap means per unit time from the first suction

amount to a smaller second suction amount.

3. The liquid ejector according to claim 2,
wherein the gear pump is driven so that the suction
5 amount per unit time becomes equal to the first suction
amount in order to discharge fluid from the nozzle, and
afterwards, is driven so that the suction amount per
unit time becomes equal to the second suction amount per
unit time, and then stops.

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4. The liquid ejector according to claim 2,
wherein the gear pump is driven at a first rotation
speed so that the fluid in the cap means is suctioned in
the first suction amount, and afterwards, driven at a
15 second rotation speed, which is lower than the first
rotation speed, so that the fluid in the cap means is
suctioned in the second suction amount.

5. The liquid ejector according to any one of
20 claims 2 to 4, wherein the gear pump includes a housing
and two gears accommodated in the housing.

6. The liquid ejector according to any one of
claims 2 to 5, further comprising:

25 a detecting means for detecting an increase and
decrease in load of the gear pump caused by a flow of
fluid into the gear pump and a flow of fluid out of the
gear pump;

wherein the gear pump changes the suction amount per
30 unit time from the first suction amount to the second
suction amount after the detecting means detects an
increase in the load of the gear pump.

7. The liquid ejector according to any one of
35 claims 2 to 6, further comprising:

a flow passage for guiding liquid to the nozzle; and
a valve device arranged upstream from the nozzle in
the flow passage;

wherein the valve device includes a pressure
5 chamber, for storing liquid, and a flexible member,
displaced in accordance with a pressure difference
between an interior and exterior of the pressure
chamber, and the valve device opens and closes based on
the displacement of the flexible member.

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8. A method for cleaning a liquid ejector including
a liquid ejection head for ejecting liquid from a
nozzle, the method comprising:

sealing the liquid ejection head with a cap means;
15 generating negative pressure with a gear pump
connected to the cap means and suctioning fluid from the
cap means in a first suction amount per unit time with
the negative pressure;

determining whether or not fluid has been discharged
20 from the nozzle; and

changing the suction amount per unit time from the
first suction amount to a smaller second suction amount
when determining that fluid has been discharged from the
nozzle.